

VIRGINIA DEPARTMENT OF TRANSPORTATION

# LOCATION AND DESIGN DIVISION

## INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM

GENERAL SUBJECT: DESIGN EXCEPTIONS / WAIVERS	NUMBER: IIM-LD-227.9 IIM-S&B-70.7
SPECIFIC SUBJECT: DESIGN EXCEPTION REQUEST FORM LD-440  DESIGN WAIVER REQUEST FORM LD-448  DESIGN WAIVER REQUEST FORM LD-452	DATE: FEBRUARY 18, 2014
	SUPERSEDES: IIM-LD-227.8 IIM-S&B-70.6
LOCATION AND DESIGN DIVISION APPROVAL:  B. A. Thrasher, P.E. State Location and Design Engineer Approved February 12, 2014	STRUCTURE AND BRIDGE DIVISION APPROVAL:  Kendal R. Walus, P.E. State Structure and Bridge Engineer Approved February 12, 2014

Changes are shaded.

### CURRENT REVISIONS

- This memorandum was revised to add a Design Waiver Policy for Multimodal Design Standards for Mixed-Use Urban Centers (Applicable to both VDOT owned and maintained roadways and Locality owned and maintained roadways).
- Clarification was added regarding small bridge replacement/rehabilitation projects.

### EFFECTIVE DATE

- This memorandum is effective upon receipt.

### DESIGN EXCEPTION BACKGROUND ANALYSIS

- In 2001 the FHWA, in conjunction with the Location and Design Division, reviewed the Design Exception Review Process. The primary purpose of this review was to streamline VDOT's Design Exception Request Process and to evaluate the effectiveness of VDOT's procedures for identifying, justifying, and documenting design exceptions. In addition, previously approved design exceptions were reviewed to determine the adequacy of the justifications, as well as the number and type of exceptions reviewed.

- The study team reviewed the design exceptions on all federal oversight and non-federal oversight projects requested in the previous five years. The study team used the following factors to assess the adequacy of the justification and documentation:
    1. Amount and character of traffic
    2. Type of project/description of project
    3. Accident history
    4. Cost of attaining full standards
    5. Resultant environmental impacts
    6. Future improvements
    7. Effect of the exception on the safety and operation of the facility
    8. The degree to which a standard is being reduced
    9. Affect of exception on other standards
    10. Any additional features being introduced that would mitigate the deviation
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## DESIGN EXCEPTION REQUEST RECOMMENDATIONS

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- The study team concluded that the format of design exception requests were not consistent. Recommendations were as follows:
    - All design exceptions should have an adequate justification and project description regardless of the funding source.
    - An estimate of the cost to attain full standards should always be discussed to determine safety benefits for the dollars invested.
    - The mitigation measures that would minimize the affects of the deviation should be considered.
    - An accident analysis should always be performed to determine what affects the design exception would have on safety.
    - Future improvements that would mitigate the affects of the design exception should be addressed.
    - In order to streamline and simplify design exception requests, Form LD-440 was developed for all design exception requests.
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## FEDERAL REQUIREMENTS

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- Under Title 23, United States Code (USC) 109, the Secretary of Transportation approves design and construction standards for the National Highway System (NHS) including Interstates. The 23 CFR 625 designates those standards, specifications, policies, guides, and references that are acceptable to the Federal Highway Administration (FHWA) for use on the NHS.

- Title 23 CFR 625 provides that exceptions may be given on a project basis to designs which do not conform to the minimum criteria as set forth in the standards, policies, and standard specifications. For National Highway System (NHS) Projects, the full list of standards can be found in 23 CFR 625.4, which includes the AASHTO “Green Book.” These standards are to be used regardless of the funding source.
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## DESIGN EXCEPTION POLICY

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- The geometric design standards approved for use are contained in AASHTO’s Policy on Geometric Design of Highways and Streets. This publication, commonly referred to as the “Green Book” is published by the American Association of State Highway and Transportation Officials (AASHTO). In addition, AASHTO’s Policy on Design Standards—Interstate System is applicable to the Interstate System. For the Interstate System, the current editions of AASHTO’s A Policy on Geometric Design of Highways and Streets and the Standard Specifications for Highway Bridges shall be used as design **standards** where they do not conflict with AASHTO’s Policy on Design Standards—Interstate System.
- VDOT recognizes the FHWA publication, “Mitigation Strategies for Design Exceptions” as providing mitigation efforts that shall be followed when processing design exceptions. This publication is available at:  
[http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/fhwa\\_sa\\_07011.pdf](http://safety.fhwa.dot.gov/geometric/pubs/mitigationstrategies/fhwa_sa_07011.pdf)
- Changes to posted speed limits of highways need to be evaluated by considering applicable design standards. Design exceptions are required whenever the change causes the design features of the roadway to not conform to the minimum criteria for the new speed limit. Isolated changes in design speeds to eliminate a possible design exception are not to be made. Instead, consistency in the design speed for the facility needs be considered. Design exceptions caused by proposed changes in the posted speed that adversely affect the design features of the roadway will not be considered.
- In a number of instances, ranges of specific values of minimum, maximum, and desirable are contained in AASHTO policies and guides. The designer should strive to meet the highest standard. Any design feature that does not meet AASHTO minimum criteria requires a design exception. Note that the Interstate System and NHS have no RRR standards. Design exceptions granted as part of a previous project must be resubmitted to the Federal Highway Administration for approval when new work is proposed in the area, regardless of funding source.
- The determination to approve a design exception should only be made after thoroughly reviewing project elements such as maximum service and safety benefits for dollar invested, compatibility with adjacent section of the roadway, and probable time before reconstruction would take place due to increased traffic demand or changed conditions at which time the appropriate standard would be met.

## FHWA'S THIRTEEN CONTROLLING FACTORS

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- Although all exceptions from accepted standards and policies need to be justified and documented, the FHWA has established 13 controlling criterion requiring formal approval. A Design Exception Request Form, LD-440, shall be submitted with appropriate documentation addressing the design exception and any related criteria:
    - Design speed
    - Lane width
    - Shoulder width
    - Bridge width
    - Structural Capacity
    - Horizontal alignment
    - Vertical alignment
    - Grade
    - Stopping Sight Distance
    - Cross slope
    - Superelevation
    - Lateral offset to obstruction (not clear zone)
    - Vertical Clearance
  - In addition, the FHWA's Virginia Division Office has established access control along the Interstate as the 14<sup>th</sup> controlling criteria. Per memorandum dated January 15, 2003 between VDOT and FHWA, a design exception must be prepared for FHWA review and approval for any break in access control within:
    - Rural areas: 300 feet of a ramp terminal (as defined by the Green Book)
    - Urban areas: 100 feet of a ramp terminal (as defined by the Green Book)
  - Existing access points are not subject to the Access Control for Interstate Interchanges Agreement between FHWA and VDOT.
  - Design criteria for new or totally reconstructed interchanges will be that which is developed from an operational analysis, but not less than the minimum values of 300 feet for rural and 100 feet for urban areas.
  - Project boundaries for design exception determination shall be at logical termini points. Example: Ramp Termini to Ramp Termini. An exception to this would be any transitional work that results from mainline improvements.
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## VDOT GEOMETRIC DESIGN CRITERIA

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- VDOT's Geometric Design Guidelines in Appendix A of the Road Design Manual are based on established design criteria and are generally consistent with AASHTO minimums. Allowances, however, have been provided for some design features such as guardrail, etc. AASHTO's A Policy on Geometric Design of Highways and Streets provides the minimum standards that should be used for development of VDOT projects. (For RRR projects, see Section A-4 of the Road Design Manual)

- VDOT's Geometric Design Guidelines present basic practical guidelines compatible with traffic, topography and safety; however, due to the restrictive format, all variables cannot be included. The designer is urged to refer to AASHTO's A Policy on Geometric Design of Highways and Streets, and related chapters in the Road Design Manual, for further discussion of design considerations before selecting the proper design criteria for a project.
- The application of the criteria provided in the Geometric Design Guidelines must be made in conjunction with sound engineering judgment to affect a proper design. The economic, environmental and social factors involved in highway design shall also be considered. The designer should always attempt to provide for the highest degree of safety and best level of service that is economically feasible. "Minimum" design criteria should be used only when overriding economic or environmental considerations preclude a feasible design using values greater than the minimum design criteria.
- When impractical to obtain the minimum design criteria in AASHTO's A Policy on Geometric Design of Highways and Streets (Green Book) or RRR Guidelines, a design exception shall be secured from the State Location and Design Engineer and/or the State Structure and Bridge Engineer. **This is applicable to both State and Federally funded projects, with and without federal oversight, and bond-funded or other funded projects that VDOT will maintain and later improve.**
- FHWA Approval
  - All interstate projects (regardless of oversight) require design exception approval from FHWA for design standards below AASHTO minimum.
  - Non-interstate projects with VDOT oversight do not require FHWA design exception approval.
  - Non-interstate projects equal to or greater than \$35M with FHWA oversight require FHWA design exception approval.
- On State funded rural projects where design constraints require that the overall design speed selected for the project is less than the design speed which would normally be selected based on terrain, a design exception is not required if the speed falls within the range of design speeds shown in VDOT's Road Design Manual for that class of roadway. The designer must fully document the necessity for the use of a reduced design speed, or any design exception, and have it approved in accordance with Design Exception Request Form LD-440. The designer should exercise care to avoid selecting a speed which may be lower than the speed the average driver would expect because of impacts on traffic operations and safety which may result.
- Whenever controlling design factors (FHWA 13 controlling criteria; 14 for Interstate) are selected that are below minimum on any of the following standards and guidelines, the District Location and Design Engineer shall request approval of these design exceptions from the State Location and Design Engineer and/or the State Structure and Bridge Engineer (all projects) and FHWA approval on all Interstate projects regardless of funding source and Federally funded projects with FHWA oversight:

- AASHTO's A Policy on Geometric Design of Highways and Streets
- AASHTO's A Policy on Design Standards—Interstate System
- AASHTO's Roadside Design Guide
- AASHTO's Standard Specifications for Highway Bridges  
(including Interim specifications and VDOT modifications)
  
- Design criteria provided in the following sources is to be met whenever practical.
  - VDOT's Road Design Manual
  - VDOT's Road and Bridge Standards
  - VDOT's Structure and Bridge Division Manuals
  
- Design exceptions for bridge width, structural capacity, horizontal clearance (other than clear zone) and vertical clearance are typically requested by the bridge designer to the State Structure and Bridge Engineer. Form LD-440 shall be utilized for the request. The cover letter by the Design Supervisor or the District Structure and Bridge Engineer (for district designs) shall indicate concurrence in the request.
  
- For requests, other than the above by the bridge designer, Form LD-440 shall be used indicating "Design Exception Request For: \_\_\_\_\_" and the appropriate documentation shall be attached. Concurrence as indicated above shall also be noted.
  
- Design exceptions for roadway geometrics approved by the State Location and Design Engineer do not necessarily indicate that the bridge geometrics are automatically approved by the State Structure and Bridge Engineer since present and future costs for bridge widening, etc. may have to be considered. Normally, the roadway designer's, and bridge designer's request will be transmitted separately.
  
- For projects designed by localities and/or consultants, requests for design exceptions shall be submitted to the District Location & Design Engineer and/or the State Structure and Bridge Engineer under the criteria and format described in this IIM.
  
- The Responsible Person submitting/preparing the design exception request shall electronically seal and digitally sign the request in the seal and sign block provided above "Submitted/Prepared By:"

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## TIMING OF DESIGN EXCEPTION REQUEST

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- The Federal Highway Administration's participation in communications and plan reviews is vital throughout the design process. Design Exceptions should be identified at the Preliminary Field Inspection and requested shortly thereafter. Plans at the Public Hearing Development Stage and the Structure & Bridge Preliminary Plan Development Stage should reflect approved design exceptions for those key design elements or features.

## DESIGN EXCEPTION REQUEST FORM LD-440

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- Design Exception requests shall utilize Design Exception Request Form LD-440 and document all supplemental information necessary and appropriate for the comprehensive review of the engineering details of the exception request.
  - Any time there is a deviation from published and accepted standards, the designer should clearly document that the deviation is to be made on the basis of an engineering analysis and that the methods of operation chosen are sufficiently protective of persons and property. The approach must incorporate reasons for the decision and approved documentation based on sound engineering judgment.
  - Location & Design Exceptions directly impacting a structure and/or bridge shall be coordinated with the District Structure and Bridge Engineer. The structure and bridge designer will determine the impact and provide guidance and recommendations to the Location and Design Project Designer and coordinate the necessary approval from the State Structure and Bridge Engineer for all resulting Structure & Bridge Design Exceptions.
  - Location & Design Division maintains Form LD-440 at the following website:  
<http://vdotforms.vdot.virginia.gov/>
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## DESIGN EXCEPTION SUPPORTING DOCUMENTATION

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- Supporting documentation for all design exceptions is to be submitted to the State Location and Design Engineer and/or the State Structure and Bridge Engineer for filing with a copy kept by the Project Manager in the project file. Any documentation regarding why AASHTO minimums were used when higher standards were recommended is to be made available to FHWA upon request.
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## DOCUMENTING DESIGN EXCEPTIONS ON PROJECT TITLE SHEET

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- All design exceptions shall be shown on the project title sheet.
  - Whenever a project design element(s) does not meet AASHTO minimum design criteria (for example, design speed) the location(s) and reason for difference(s) are to be noted on the project title sheet. In order to alert everyone concerned, it will be necessary to identify these locations from the earliest stages of plan development. If changes are made during plan development that would alter the situation, then the title sheet must be corrected to reflect the new design. The following methods will be used to show design exceptions:

Plans with Functional Classification block:

EXAMPLE:

EXCEPTIONS TO MAINLINE DESIGN SPEED			
Sta. To Sta.	Design Speed (mph)	Reasons for Exception	Approval Date
102+75 to 104+75	50	Crest Vertical Curve	October 28, 2010
621+00 to 624+50	60	Horizontal Alignment	October 28, 2010

The data as indicated in the previous example is to be shown directly below the Functional Classification block.

Plans without Functional Classification block: Exceptions should be noted inside the title sheet borderlines immediately following the design speed classification as follows:

EXAMPLE:

V = 60 mph Exceptions: 102 + 75 - 104 + 75 (40 mph) Crest Vertical Curve 621 + 00 - 624 + 00 (35 mph) Horizontal Alignment
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- For additional information on the placement of approved design exceptions on the Structure & Bridge title sheet, see Manual of Structure and Bridge Division, Volume V, Part 2.
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EXAMPLES OF WHEN A DESIGN EXCEPTION IS **NOT** REQUIRED

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- A Design Exception is not required for Design Speed within the functional area of a Roundabout in accordance with the FHWA Roundabout Informational Guide (NCHRP 672) Chapter 6, available at:  
[http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_672.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_672.pdf)
- A Design Exception for Horizontal Alignment or Stopping Sight Distance is not required within the physical length of the deceleration lane for turning vehicles, which consists of the entering taper length,  $L_2$ , the deceleration length,  $L_3$ , and the storage length,  $L_4$ , for a stop condition or a signalized "T" intersection. To determine this Total Length, see 2011 AASHTO Green Book, page 9-125, section 9.7.2 Deceleration Lanes.
- A Design Exception is not required for a Sag Vertical Curve when the driver comfort criteria is met and lighting is provided. The length of sag vertical curves to satisfy the comfort criteria over the typical design speed range results in minimum curve lengths of about half those based on headlight criteria.
- A Design Exception is not required for overlays and the installation of rumble strips or stripes.



- Design Exceptions are generally not required for pavement transitions within VDOT defined “transition areas” of a project. The transition length (L) shall be in accordance with RDM, Appendix A (Lane/Pavement Transitions). However, the Designer shall contact the appropriate Regional Traffic Engineer when reviewing the accident history for the past three (3) years as “High Accident Rates” may require a Design Exception.
- The intent of the establishment of project termini for the majority of small bridge replacement or rehabilitation projects is to tie into the existing approach alignment as quickly as possible. The scope of these types of projects is to correct the structural deficiencies of the structure and not for the correction of substandard approach roadway geometrics.

Therefore, for small bridge replacement/rehabilitation projects with no horizontal or vertical alignment changes, the minimum transition length to tie back into the existing roadway shall be  $\frac{1}{2}L$  in accordance with the Road Design Manual, Appendix A, Lane and Pavement Transitions. For similar type projects with horizontal or vertical alignment changes, the minimum transition length shall be “L” as shown in the Road Design Manual, Appendix A.

In either case, unless there is a site specific safety problem at the project site attributable to any substandard geometric feature, substandard approach roadway geometrics associated with these small bridge replacement/rehabilitation projects do not require corrections and do not require design exceptions or design waivers unless the existing conditions are made worse.

- A Design Exception is not required for Spot Safety and Operational Improvement Projects (as long as existing geometric features are not made worse) on **non-NHS** roadways with a scope limited to one or more of these elements:
  - Intersection improvement that does not add capacity, such as turn lane extension, and changing turning radius
    - **\*\*Note: Adding a right or left turn lane increases capacity\*\***
  - Vertical curve adjustment (HSIP only)
  - Horizontal curve adjustment (HSIP only)
  - Signal Optimization/Retiming
  - Adaptive Signals operation
  - ITS devices and systems to improve safety & operational efficiency
  - Sign upgrade to comply with latest MUTCD requirements
  - Flashing Beacons/Warnings
  - Acceleration Lanes on non-interstate system
  - Pedestrian and Bicycle accommodation such as bicycle lanes, shared use path, pedestrian refuge, sidewalk and crosswalk projects
  - Roadway Lighting, Signs, Signals, Raised Pavement Markers, Pavement Markings
  - Installation or adjustment of Guardrail Systems to meet VDOT’s current policy and/or standards
  - Shoulder Widening up to 4 ft
  - Paving existing graded shoulder
  - High friction surfacing
  - Safety edge
  - Rumble strip installation

- A Design Exception/Design Waiver is not required for safety and operational projects such as HSIP and ITS projects on **NHS** roadways in accordance with the Memorandum dated August 28, 2013 (attached at the end of this IIM). This agreement is not applicable to Preventative Maintenance, 3R Projects and projects that add capacity to the roadway. Additional projects may be eligible on a case by case basis if approved by the Office of the State Traffic Engineer in coordination with the Federal Highway Administration as appropriate.
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#### DESIGN EXCEPTION POLICY (APPLICABLE TO VDOT STRUCTURES & BRIDGES)

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- Design exceptions shall be requested for all structures and/or bridges on the Interstate, Primary and Secondary System that do **not** meet AASHTO minimum design standards regardless of who owns and maintains the structure and/or bridge.
- For additional information on Design Exceptions with regard to structures and/or bridges, see Manual of Structure and Bridge Division, Volume V, Part 2, Chapter 6, Files No. 6.01-4 and 6.01-5 at:  
<http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/Bridge%20Manuals/VolumeV-Part2/Chapter6.pdf>

#### DESIGN WAIVER POLICY FOR ROADWAY DESIGN (APPLICABLE TO VDOT OWNED AND MAINTAINED ROADWAYS **ONLY**)

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- Design Waivers are required when deviations from VDOT's design criteria occur on VDOT owned and maintained roadways only. When design criteria meet or exceed AASHTO and Americans with Disabilities Act Accessibility Guidelines (ADAAG) minimum design standards, but fall short of VDOT's minimum design standards, a Design Waiver shall be required. Design Waivers will be applicable to all projects regardless of functional classification and funding and shall be documented and approved in accordance with the Design Waiver Request Form LD-448.
- Items requiring a Design Waiver include, but are not limited to, the following:
  - Clear Zone
  - Paved Shoulder Width
  - Curb and Gutter
  - Minimum Radius
  - Pedestrian Accessibility Compliance (See IIM-LD-55)
  - Ditch Width
  - Lane Tapers
  - Buffer Strip Width
  - Superelevation
  - Intersection Sight Distance
  - Total Shoulder Width

#### DESIGN WAIVER POLICY FOR HYDRAULIC DESIGN (APPLICABLE TO VDOT OWNED AND MAINTAINED ROADWAYS **ONLY**)

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- Design Waivers are required when deviations from VDOT's hydraulic design criteria occur on VDOT owned and maintained roadways only, regardless of functional classification and funding. When design criteria fall short of VDOT's minimum design standards, a Design Waiver shall be requested. Design Waivers shall be documented and approved in accordance with the Design Waiver Request Form LD-448.

- Items requiring a Design Waiver include:
    - Culvert Allowable Headwater (AHW) Requirements – Chapter 8, Section 8.3.2.2.
    - Minimum Pipe Size for a Facility (based on Roadway Classification & Fill Heights) – Chapter 8, Section 8.3.3.1; Chapter 15, DDM 1-3 - Pipe in High Fills.
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#### DESIGN WAIVER POLICY (APPLICABLE TO VDOT STRUCTURES & BRIDGES)

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- Design Waivers shall be requested for all structures and/or bridges on the Interstate, Primary and Secondary System that do **not** meet VDOT minimum design standards regardless of who owns and maintains the structure and/or bridge.
  - For additional information on Design Waivers with regard to structures and/or bridges, see Manual of Structure and Bridge Division, Volume V, Part 2, Chapter 6, Files No. 6.01-4 and 6.01-5 at:  
<http://www.extranet.vdot.state.va.us/locdes/electronic%20pubs/Bridge%20Manuals/VolumeV-Part2/Chapter6.pdf>
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#### DESIGN WAIVER REQUEST FORM LD-448

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- L&D Design Waiver requests shall utilize Design Waiver Request Form LD-448 and document all supplemental information necessary and appropriate for the comprehensive review of the engineering details of the waiver request.
  - Any time there is a deviation from published and accepted standards, the designer should clearly document that the deviation is to be made on the basis of an engineering analysis and that the methods of operation chosen are sufficiently protective of persons and property. The approach must incorporate reasons for the decision and approved documentation based on sound engineering judgment.
  - Location and Design Division maintains Form LD-448 at the following website:  
<http://vdotforms.vdot.virginia.gov/>
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#### REQUESTS FOR A DESIGN WAIVER (FORM LD-448)

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- Requests for a Design Waiver (Form LD-448) must contain the following:
  - Established design criteria versus proposed and existing criteria.
  - Reason the appropriate design criteria cannot be met.
  - Justification for the proposed criteria.
  - Any background information which documents, supports or justifies the request.
  - Any mitigation that will be provided to further support or justify the request.
  - Cost to meet design criteria.

- Submittal Process
  - Design Waiver requests shall be prepared by the Location & Design Project Designer and submitted to the District Location and Design Engineer.
    - For roadway projects designed by localities that are VDOT owned and maintained, requests for design waivers shall be submitted to the VDOT Project Manager/Coordinator under the criteria and format described in this IIM.
- Approval Authority
  - Location and Design Division Waivers shall be reviewed and approved by the appropriate District Location & Design Engineer.
  - Approval authority shall not be sub-delegated to a lower position without the approval of the State Location & Design Engineer.
  - Complete documentation should be retained by the Project Manager in the project file and a copy of the approved waiver sent to the appropriate Assistant State Location & Design Engineer and the State Geometric Engineer for means of compliancy and oversight purposes.
  - Location & Design Waivers directly impacting a structure and/or bridge shall be coordinated with the District Structure and Bridge Engineer. The structure and bridge designer will determine the impact and provide guidance and recommendations to the Location and Design Project Designer and coordinate the necessary approval from the State Structure and Bridge Engineer for all resulting Structure & Bridge Design Waivers.
- Project Title Sheet
  - Design Waivers are **not** to be shown on the Project Title Sheet.

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**DESIGN WAIVER POLICY FOR MULTIMODAL DESIGN STANDARDS FOR MIXED-USE URBAN CENTERS (APPLICABLE TO BOTH VDOT OWNED AND MAINTAINED ROADWAYS AND LOCALITY OWNED AND MAINTAINED ROADWAYS)**

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- When “**optimal**” values cannot be met for the modal emphasis primary element(s) mentioned on the Design Waiver Request Form for Mixed-Use Urban Centers, the Design Waiver Form LD-452 shall be submitted in accordance with this IIM.

## DESIGN WAIVER REQUEST FORM LD-452

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- Design Waiver Request Form LD-452 shall be completed and all supplemental information necessary and appropriate for the comprehensive review of the engineering details of the waiver request shall be included in the submission.
- Location and Design Division maintains Form LD-452 at the following website:  
<http://vdotforms.vdot.virginia.gov/>
- REQUESTS, SUBMITTALS and APPROVALS for this Design Waiver (Form LD-452) shall follow the current Design Waiver (Form LD-448) process as mentioned in this IIM.



# COMMONWEALTH *of* VIRGINIA

DEPARTMENT OF TRANSPORTATION  
1401 EAST BROAD STREET  
RICHMOND, VIRGINIA 23219 2000

Gregory A. Whirley  
Commissioner

August 28, 2013

Ms. Irene Rico  
Division Administrator  
Federal Highway Administration  
400 N. 8<sup>th</sup> Street, Room 750  
Richmond, VA 23240-0249

RE: Agreement for Safety and Operational Projects Not Requiring Formal Design Exceptions and Design Waivers (excludes Preventative Maintenance, 3R Projects and projects that add capacity to the roadway)

Dear Ms. Rico:

On January 12, 2012, our two agencies met and discussed, among other things, a more efficient approach to smaller scale safety and operational projects. We agreed that two categories of safety and operational projects do not require Formal Design Exceptions and/or Design Waivers.

This agreement excludes Preventative Maintenance and 3R projects as well as improvements that will provide additional capacity to Interstate and NHS highways with controlled access. These projects will be evaluated on a case by case basis. In no way shall safety and operational projects adversely impact the safety of the roadway or its users.

In light of our agreement we propose Formal Design Exceptions and/or Design Waivers not be required for:

### Systemic Safety Asset Improvement Projects

- Formal Design Exceptions and/or Design Waivers are not required for projects which focus on systemic improvements of a specific road safety feature or operational element, such as rumble strips, guardrail, signs, pavement marking systems, signals, Intelligent Transportation Systems and devices as outlined in Appendix A. These projects have been proven to generate measurable safety benefits.

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### **Spot Safety & Operational Improvement Projects**

- Formal Design Exceptions and/or Design Waivers are not required for targeted-scope safety and operations projects such as typical Highway Safety Improvement Program (HSIP) and Intelligent Transportation (ITS) projects. These projects typically have limited or targeted scope and improve safety or operation. These types of projects typically do not add capacity to the roadway. If the proposed improvements provide for additional capacity (i.e. additional turn lane, auxiliary lane, etc), then the Design Exception/Design Waiver process must be followed.

Appendix A is a general list of safety and operational projects that will not require Formal Design Exception and/or Waiver under this agreement. These projects are not intended to address the 14 FHWA/VDOT controlling criteria that require design exceptions. In most cases, the substandard features that are present will remain in place. No formal design exception or design waiver process is therefore required.

Documentation of Safety and Operational projects not requiring Formal Design Exceptions and/or Waivers will be provided in the Project Narrative section of VDOT Project Scoping Sheet Form (PM-100) or through the form attached as Appendix B. Project specific documents such as HSIP proposal or ITS Form 940 should also be attached.

We request your concurrence. If you have any questions, please contact Mohammad Mirshahi at (804) 786-2507.

Sincerely,

(Signature on file)

Mohammad Mirshahi, P.E.

Deputy Chief Engineer

**Concurred by** (Signature on file) **FHWA Virginia Division**

**Signature** (Signature on file) **Date: 9/16/2013**

Cc: Garrett Moore, P.E.  
Raymond J. Khoury, P.E.  
Bart Thrasher, P.E.  
Emmett R. Heltzel, P.E.  
Kendal Walus, P.E.  
Dean Gustafson, P.E.

#### Attachments

VDOT-FHWA Monthly Coordination Meeting-January 12, 2012

VDOT Safety Analysis Guidelines For Preventive Maintenance and 3R Projects-October 26, 2012

Eligibility of Preventative Maintenance on Federal-Aid Projects-November 8, 2010

Agreement for Maintenance Projects on NHS Agreement-April 23, 2009

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## APPENDIX A

### Example List of Safety and Operational Projects Not Requiring Formal Design Exception and Waiver\*

Systemic Safety Assets Improvement Projects- Scope limited to one or more of these elements:

- Roadway Lighting
- Signs
- Signals
- Pavement Marking Systems
- ITS devices and systems to improve safety & operational efficiency
- Installation or adjustment of Guardrail Systems to meet VDOT's current policy and/or standards
- Paving existing graded shoulder
- Shoulder widening up to 4ft
- High friction surfacing
- Safety edge
- Rumble strip installation

Spot Safety & Operational Improvement Projects- Scope limited to one or more of these elements:

- Intersection improvement that does not add capacity, such as turn lane extension, and changing turning radius and does not alter the intersection as defined in the Department of Justice /FHWA Technical Assistance Memo dated July 8, 2013  
(<http://www.ada.gov/do-j-fhwa-ta.htm>)
- Vertical curve adjustment (*HSIP only*)
- Horizontal curve adjustment (*HSIP only*)
- Signal Optimization/Retiming
- Adaptive Signals operation
- ITS devices and systems to improve safety & operational efficiency
- Sign upgrade to comply with latest MUTCD requirements
- Flashing Beacons/Warnings
- Acceleration Lanes on non-interstate system
- Pedestrian and Bicycle accommodation such as bicycle lanes, shared use path, pedestrian refuge, sidewalk and crosswalk projects
- Roadway Lighting, Signs, Signals, Raised Pavement Markers, Pavement Markings
- Installation or adjustment of Guardrail Systems to meet VDOT's current policy and/or standards
- Shoulder Widening up to 4 ft
- Paving existing graded shoulder
- High friction surfacing
- Safety edge
- Rumble strip installation

\*Additional projects may be eligible on a case by case basis if approved by the Office of State Traffic Engineer in coordination with the Federal Highway Administration as appropriate.



APPENDIX B  
Safety or Operational Project Documentation

District: \_\_\_\_\_

UPC:

County: \_\_\_\_\_

Federal#:

Route: \_\_\_\_\_

Prepared By: \_\_\_\_\_

Project Type/Category: \_\_\_\_\_

Existing Conditions:

Scope of Work:

Project Notes *(attach program specific documents such as HSIP Proposal or ITS Form 940):*

Approval:

\_\_\_\_\_  
Signature  
Responsible Charge Engineer

\_\_\_\_\_  
Date